CLAIMS

1. A power supply comprising:

a source of an input supply voltage developed between a pair of input supply terminals;

a first supply inductance;

a switch responsive to a periodic control signal for producing from said input supply voltage a periodic current at a first frequency in said first supply inductance that is non-isolated from each of said first pair of terminals;

a pair of capacitors coupled in a current path of said first supply inductance current for developing an output supply between a pair of output supply terminals that are coupled to a load, said pair of capacitors providing capacitive isolation of said output supply terminals from said input supply terminals, respectively, at frequencies lower than said first frequency and form with said first supply inductance a first resonant circuit that varies said first supply inductance current in a resonant manner operation, during a first portion of a period of said first supply inductance current; and

a first rectifier coupled in said current path for preventing the first supply inductance current variation from resulting in a polarity change of said first supply inductance current, during said first period portion.

2. The power supply according to Claim 1, further comprising a second supply inductance coupled between said pair of capacitors, wherein said first supply inductance current charges said pair of capacitors in a first direction, during said first portion period, and wherein said second supply inductance forms with said pair of capacitors a second resonant circuit for charging said pair of capacitors in an opposite direction, during a second portion of said period.

3. The power supply according to Claim 2, wherein said switch is at a first state, during said first period portion, and at a second state, during said second period portion.

4. The power supply according to Claim 2, further comprising a second rectifier for rectifying a voltage developed in said second supply inductance to develop a rectified output supply voltage in said load.

5. The power supply according to Claim 4, further comprising a filter capacitor for said rectified output supply voltage to form a low impedance path between said pair of capacitors, during said first portion of said period.

6. The power supply of claim 1, wherein the first rectifier comprises a diode having a first terminal connected to the first inductance, and a second terminal connected to one of the pair of capacitors.

7. The power supply of claim 6, further comprising a second rectifier coupled between the first one of the capacitors and the load.

8. The power supply of claim 1, wherein the periodic control signal is produced from an oscillator circuit coupled to the switch.

9. The power supply of claim 1, wherein the switch comprises a switching transistor.

10. The power supply of claim 1, further comprising a third capacitor connected in parallel with the load.

11. The power supply of claim 1, wherein the periodic control signal is produced from a control circuit coupled to the switch and operated in one of an on/off and burst mode of operation.

12. The power supply of claim 11, wherein an opto-coupler is connected to the control circuit such that when an output voltage across the load exceeds a reference voltage, the controller is switched off via the opto-coupler.

13. The power supply of claim 12, further comprising a diode in parallel with the load for sensing when an output voltage across the load exceeds the reference voltage.

14. The power supply of claim 1, further comprising a second supply inductance coupled between said pair of capacitors and a tap coupled to a second supply inductance for providing a second lower output supply voltage.

15. A power supply, comprising:

a source of an input supply voltage developed between a pair of input supply terminals;

a first supply inductance;

a switch responsive to a periodic control signal for producing from said input supply voltage a periodic current at a first frequency in said first supply inductance that is non-isolated from each of said first pair of terminals;

a second supply inductance;

a pair of capacitors coupled in series with said first supply inductance, during a first portion of a period of said control signal, and having said second supply inductance coupled between said capacitors for developing from a voltage produced in said second supply inductance an output supply between a pair of output supply terminals of a load, said pair of capacitors providing capacitive isolation of said output supply terminals from said input supply terminals at frequencies lower than said first frequency; and

a first rectifier coupled in series with said first supply inductance for preventing said first supply inductance current from changing polarity.